NOT TO BE TAKEN AWAY

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OVARIAN SARCOMATA IN CHILDREN: AN ACCOUNT OF THREE CASES.

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SARCOMATOUS tumours of the ovary are of such rare occurrence, even in children, that it seems desirable to place all cases on record. This must be the excuse for the present communication.

A girl, aged 5 years, was admitted to the Hospital for Sick Children, Great Ormond Street, on September the 23rd, 1914, in a condition of urgent illness.

Six weeks previously a swelling had been noticed in the lower abdomen, which had steadily increased in size. She suffered from colicky pain and some constipation. During the week preceding admission her symptoms became more pronounced; she vomited and was feverish. Blood was passed in small quantities *per vaginam*.

Her previous health had been excellent.

On admission her temperature was 102° F. and pulse 130 per minute. The tongue was dry and furred.

A large swelling occupied the whole lower abdomen, extending upwards beyond the umbilicus. This swelling was very tender and the overlying abdominal wall rigid. It was dull on percussion,

and catheterisation made no appreciable alteration in the physical signs.

Per rectum a firm smooth mass could be felt occupying the middle line.

Mr. L. E. Barrington-Ward saw the case with me, and at his request I proceeded to perform a laparotomy.

Anæsthesia having been induced with ether, the abdomen was opened through a right pararectal incision. The nature of the enlargement was at once apparent as a solid tumour arising in the pelvis. The incision was enlarged and the tumour shelled out of the abdominal cavity.

It was slightly adherent at its upper part to coils of small bowel and omentum, which, however, separated easily. It was then found to be springing from the left ovary, which was removed with the tumour, the pedicle being ligatured off with stout silk. No evidence of secondary deposits could be found in the abdominal cavity, and the remaining tube and ovary appeared healthy.

The uterus was perhaps a little large for a child of this age, but otherwise appeared normal.

The abdomen was closed in layers and recovery was uneventful, the skin sutures being removed on the eighth day, and the child discharged from the hospital on October the 6th.

With the idea of diminishing the chances of recurrence of the growth, she was subjected to a course of X-ray treatment by Dr. Ironside Bruce. This consisted of thirteen twenty minute exposures at intervals of one week through eight layers of felt at a distance of 10 in. from the tube.

When last seen (January, 1915) she was fat and well.

Pathology.—The tumour after removal (Fig. 1) weighed 3½ lb. and had attached to it a portion of the left Fallopian tube. No trace of the normal ovary was present. The surface was smooth and glistening, with here and there small cysts containing a blood-stained serous fluid ; apart from these cystic areas the consistency was firm. On section the main mass of the growth was found to consist of marble white sarcomatous tissue. Cystic degeneration was in evidence at various points in the substance of the tumour, some cysts containing blood-stained serum and others colloid material. (Fig. 2).

Microscopically.—The solid portions of the tumour showed the structure of a mixed spindle and round-celled sarcoma, the round cell predominating.

Diagnosis.—Mixed-celled sarcoma, mainly round-celled.

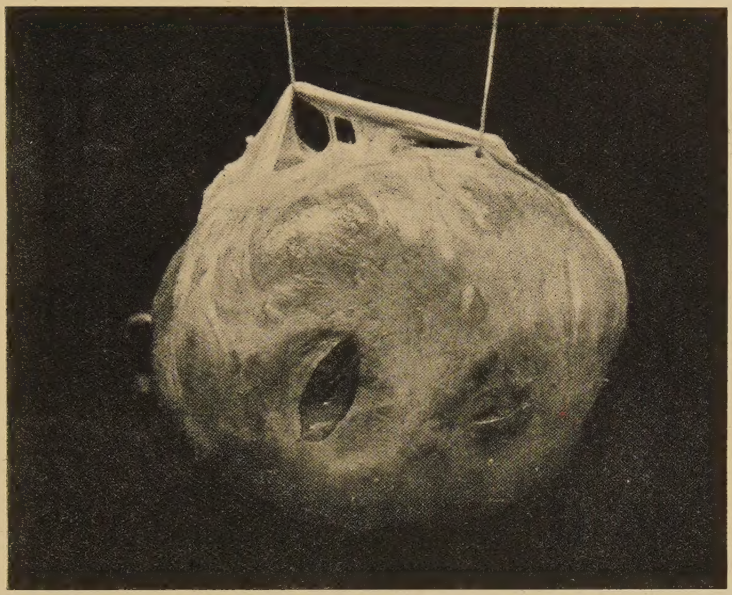


FIG. 1.—Tumour after removal.

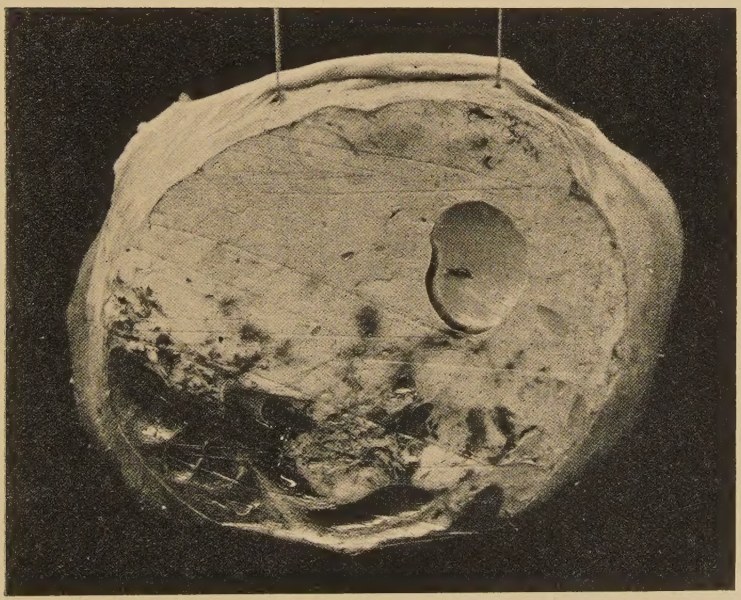


FIG. 2.—Cut surface of tumour.

The Museum of the Hospital for Sick Children contains two further specimens of ovarian sarcoma, one removed successfully during life, the other obtained from a fatal case. I had the opportunity of studying the former personally, while it was under the care of Mr. E. M. Corner.

A brief account of these two cases may be of interest:

(1) A solid tumour about the size of a cricket ball, with a portion of the corresponding Fallopian tube attached, was removed from the right broad ligament of a girl aged 10 years. She was admitted to the hospital on October the 22nd, 1912, with a history of recent colicky abdominal pains, some constipation, and loss of weight. Urination was natural, and there had been no bleeding from the vagina. A lump in the belly had been noticed five weeks before admission.

On examination the patient was pale with a normal temperature and pulse rate. A swelling was noticeable in the right lower abdomen, produced by a firm rounded freely movable tumour apparently arising in the pelvis.

Per rectum a hard smooth mass was palpable on the right side, clearly part of the same tumour.

Laparotomy was performed on October the 27th, 1912, and the tumour removed with ease. It was slightly adherent at one or two points to the omentum, and some blood-stained fluid was present in the peritoneal cavity. The child made a complete recovery, and a letter, dated January the 7th, 1915, states that she remains in perfect health.

The microscopic structure of this tumour was that of a mixed-cell sarcoma—round the spindle cells—with a preponderance of the small round cell.

(2) The specimen consisted of a large rounded solid tumour, the size of a cocoanut, which occurred in the child, aged 7 years, who was under the care of Dr. West in 1871.

She was admitted in an exhausted condition with a large abdominal mass, rising out of the right side of the pelvis and extending upwards to the liver. The illness was of four months' duration. She maintained a febrile condition, her temperature ranging between 103° F. and 104° F. Œdema of the lower extremities finally supervened, and she gradually sank and died a month after admission.

The tumour weighed $5\frac{3}{4}$ lb., and arose in the right ovary. It was encapsulated except at its upper pole, where it had burst through its capsule and was extending by direct invasion to adjacent omentum, intestines, and liver, so that fragments of growth remained attached

to these organs when the tumour was removed. There was no glandular enlargement and no metastases were found elsewhere.

The growth showed areas of cystic and colloid degeneration in places, and microscopically was evidently almost pure round-celled sarcoma.

The ætiology of ovarian sarcomata is unknown. As they are more common in children than in adults (Bland Sutton) (1), presumably they are analogous to the renal sarcomata, though they are certainly much less frequent in their appearance.

A. Doran (3) has recorded a case in a fœtus of seven months.

Bland Sutton (2), in 1896, collected 100 cases of ovariotomy in girls under fifteen. Twenty-one of the series were instances of sarcoma, though, as he points out, this does not represent the real proportion, since many sarcomata end fatally without operation.

A striking feature of his figures was the heavy mortality—seven cases died immediately after the operation, whilst four of those he was able to trace were dead at the end of one year. The disease is obviously, therefore, a very fatal one, and our experience is unusually happy.

The three cases here recorded illustrate well certain aspects of the disease, namely, the insidious onset, with unexplained colicky pain, later the appearance of a mobile lump, with possibly some precocious menstruation, the steady enlargement of the abdomen, with pain and fever, the result of an adhesive peritonitis, occurring on the surface of the growth, and finally the tendency to spread, by direct extension, along lines of adhesion rather than by metastases. Few conclusions, however, can be drawn from so short a series of cases, and this account is proffered rather as a numerical addition to the literature than otherwise.

I am indebted to the members of the staff of the Hospital for Sick Children concerned for their permission to publish this account.

Bibliography.

(1) Bland Sutton, J.—'Tumours, Innocent and Malignant,' 5th ed., 1911, p. 522.

(2) *Idem.*—'Diseases of the Ovaries and Fallopian Tubes,' 1896, p. 175.

(3) Doran, A.—"Large Ovarian Tumours in a Seven Months Child," 'Trans. Path. Soc.,' 1889, xl., p. 200.

A CASE OF THE ATONIC FORM OF CEREBRAL DIPLEGIA.*

By E. G. Fearnsides, M.A., M.D.Cantab., B.Sc.Lond., F.R.C.P.,
Beit Memorial Research Fellow; Assistant Physician to the Hospital for Epilepsy and Paralysis, Maida Vale, London, W.; late Medical Registrar to the London Hospital, E.

H. B—, born April the 7th, 1910. Family history: The patient's father, born in 1881, is the third child of a family of three children, aged respectively 38, 35, and 33 years. The patient's mother is the eldest of four children, aged 33, 29, 27, and 23 years. As far as can be ascertained there is no family history of nervous or muscular disease. The parents married in 1900, and since marriage have enjoyed good health. Of this marriage the first child was a male, who suffered after birth from "convulsions" and died at the age of 4 months; the second, a girl, now aged 12½ years, who is normal; the third, a normal boy, aged 8 years; and the fourth, the patient, aged 3¾ years. Whilst carrying the patient, the mother's health was good.

The child was born at term, and at birth weighed 7 lb. 8 oz. At the age of three weeks he was found to have a right inguinal hernia; he was taken to Shadwell Hospital, circumcised, and given a truss. For the first five months of life he was fed by the breast only; later he was fed on milk and barley water and then on milk and Allenburys' No. 1 Food. When aged six weeks he was noticed to be "soft"; he was taken to doctors, who treated him for "wasting," and ordered dietetic treatment, with extra fat, oil and malt, and virol, and cold sponging. Despite treatment, he gained weight slowly. In June, 1912, he began to suffer from a nasal discharge; this continued off and on until November, and in September, 1912, was complicated by the appearance of otorrhœa. In October, 1912, he was treated at the Aural Department of the London Hospital for "rhinorrhœa and otorrhœa"; under treatment these discharges ceased. In November, 1912, a radical cure for right inguinal hernia was performed by Mr. Lett; the wound healed by first intention. He was able to say "mam" and "dad" at the age of eight months, cut his teeth at the age of thirteen months, but did not walk till he was aged two.

He first came under my observation in December, 1912, when he was an in-patient at the London Hospital under the care of Dr.

* The case was shown at the Neurological Section of the Royal Society of Medicine, on February the 25th, 1915.

Head. At that time he seemed to be a characteristic example of the disease, amyotonia congenita. He could not talk. He dribbled continuously. He could not sit up. His habits were dirty, but yet he could make his requirements known and was intelligent. He

Fig. 1.

made attempts to feed himself. He was a small, thin, pale, limp child. His hair was long and lax. The ears, palate, and face were well developed. The head was large and the forehead high. The fontanelle was almost closed. The teeth were normal. No abnormal signs were discovered in the heart, lungs, abdomen, or urine. The special senses and optic discs were normal and the cranial nerves unaffected. The muscles of the face and those moving the jaw were in power feeble. The face was flat and expressionless.

The musculature throughout the body and limbs was small and absolutely atonic. The ligaments were relaxed, and the limbs could be placed into all sorts of fantastic positions without causing any inconvenience. The movements of the spine were extremely free. There was no ball to either great toe. On palpation it was impossible to distinguish the limits between subcutaneous tissue and muscles.

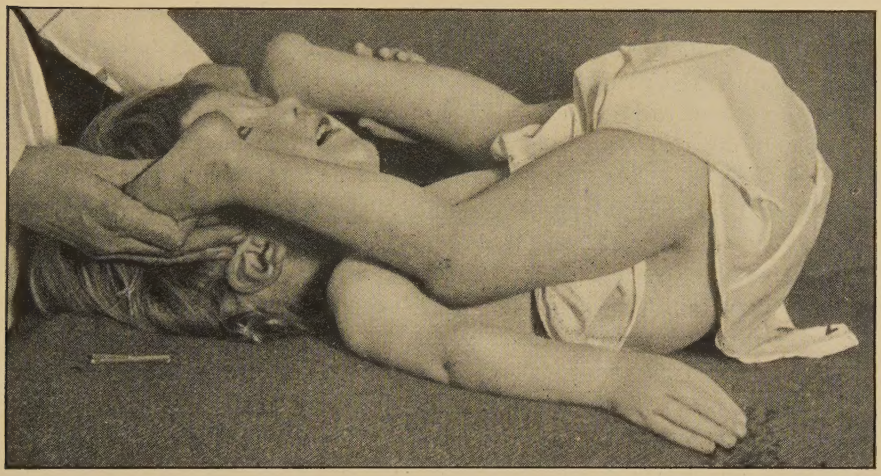
Fig. 2.

The muscular regions had a peculiar soft, velvety feel. A limb held by its proximal end could be shaken like a flail. Contractures were not present, and there was no deformity of the body or limbs. All voluntary movements could be performed quickly and with normal range. The bones appeared to be unaffected. No sensory changes could be demonstrated. To electrical stimulation no changes were present. No deep reflexes could be obtained. The plantar responses were difficult to elicit; usually on stimulation of the sole a gross voluntary movement occurred. The three photographs taken

at this time and here reproduced well illustrate the amyotonic condition.

On January the 7th, 1913, the patient caught measles and was discharged. He was next seen at the London Hospital in August, 1914. At that time he complained of pain in the abdomen. The legs were much less hypotonic than formerly, and knee-jerks could be elicited. In September, 1914, he was put into a double Thomas' splint, which he wore continuously until admission. On February the 12th, 1915, he was admitted to the London Hospital under the care of Dr. F. J. Smith, suffering from constipation and a distended

Fig. 3.



abdomen ; under administration of enemata the dilatation entirely disappeared.

The patient is a bright, happy, contented child. He weighs 1 st. 13¾ lbs. The head measures 20¼ in. in circumference, 13⅛ in. from nasion to inion, and 13¾ in. from external auditory meatus to external auditory meatus. He is clean in his habits, but cannot feed himself. He knows the value of money and plays with toys. He no longer dribbles, but is babyish in his habits. Mentally he is certainly backward. Speech has a curious hesitating and nasal character, and he uses few words to express his wants. He never complains. The special senses and optic discs are unaffected. The pupils react normally, and movements of the eyes, jaws, face, palate, larynx, and tongue can be carried out voluntarily through a normal range and with fair power. The face is flat and shows little

expression. The hands and feet are proportionately long and narrow. The muscles of the upper extremities and trunk are intensely hypotonic. The wrists can be hyperextended and hyperflexed to such an extent that the hands can be brought into contact with the forearms. He can sit up, but when sitting cannot hold his back straight. He makes feeble attempts at walking, crossing the knees and extending the ankles. The muscles of the feet are hypotonic, those of the calves, thighs, and to a less extent of the buttocks hypertonic. There is some contracture of the adductor muscles, and abduction of the thighs cannot be passively brought about over a normal range. The knees and hips can be fully flexed by the exertion of continued pressure, and the ankles can be dorsiflexed beyond the average limits. When the child is held by the axillæ the kyphosis of the spine is corrected, the legs are extended at the knees and flexed at the hips. If one then tries to bend the legs, they are found to be rigid. When lying in bed or sitting up he can move his arms and legs freely, but all his movements show gross inco-ordination, and in every movement of his extremities head, neck, trunk, and all four extremities partake. Dyssynergy occurs in every voluntary effort. The child can be "folded" up on itself. All his ligaments are relaxed. There is no muscular wasting. No fibrillary twitchings have ever been observed. The relaxation of muscles after contraction takes place normally. The muscles of the extremities all respond normally on electrical stimulation. The knee-jerks are extremely brisk, and ankle-jerks can be obtained. The plantar responses are indefinite in type, but a true extensor response has never been observed. Abdominal reflexes are present. The wrist- and elbow-jerks cannot be elicited. The sphincters are controlled. The Wassermann reaction is negative. No abnormal signs in the organs are present.

When this child first came under observation in December, 1912, he appeared to be a characteristic instance of amyotonia congenita. All the muscles were hypotonic, and no tendon-reflexes could be elicited. Since this time he has improved considerably, and before he was placed in the splint in September, 1914, he was able to walk with difficulty. Now, in February, 1915, he shows exaggerated knee-jerks, and ankle-jerks can be obtained. In active movements of the extremities power is little impaired, but there is gross clumsiness and ataxy.

The diagnosis in this case lies between amyotonia congenita (Oppenheim's disease) and the atonic form of cerebral diplegia. Batten and von Wyss (1) in the March number of this JOURNAL

have described four instances of the latter condition and have called attention to the fact that hypertonicity in the patients showing the cerebral form of atonicity can frequently be induced in the lower extremities by holding the child suspended by the axillæ—a phenomenon which is here well illustrated.

The patient, though backward, cannot at present be described as mentally defective and would seem to belong to Pierce Clark's group of cases of cerebro-cerebellar diplegia. Against the diagnosis of amyotonia congenita we have the present day findings of exaggerated tendon-reflexes in the lower extremities and persistent adductor spasm. The child, however, has spent six months in a double Thomas's hip splint, and we know little of the effect of continued rest upon the tone of the muscles of patients with amyotonia congenita. I am indebted to Dr. F. J. Smith for permission to publish this case, and to him I offer my best thanks.

REFERENCE.

(1) BATTEN and VON WYSS.—"The Atonic form of Cerebral Diplegia," BRITISH JOURNAL OF CHILDREN'S DISEASES, 1915, xii, p. 65. This paper contains the full literature on this interesting subject and discusses the differential diagnosis between amyotonia congenita and the atonic form of cerebral diplegia.

CASE OF TUBERCULOSIS OF THE AUDITORY APPARATUS; INTERNAL HYDROCEPHALUS; PERMANENT DRAINAGE OF THE LATERAL VENTRICLE.*

By C. E. WEST, F.R.C.S.
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A GIRL, aged 2½ years, was admitted to St. Bartholomew's Hospital on May the 23rd, 1914, with a history of pain and discharge occurring from the left ear on May the 12th and left facial paralysis on May the 19th. There was complete left facial paralysis. On the right side a radical mastoid operation had been carried out at Guy's Hospital in February, 1914. There was a continued discharge from this ear, and the lymphatic glands in both anterior triangles of the neck were enlarged. A few days after admission an extensive radical mastoid operation was performed on the left side. The

* This case was reported to the Otological Section of the Royal Society of Medicine on February the 19th, 1915.

tympanic part of the facial nerve was found to be completely lost in a mass of soft granulations, and the whole of the region of the labyrinth was crumbling, and the jugular bulb was exposed.

The child was very collapsed at the end of the operation.

Early in July, a facio-hypoglossal anastomosis was carried out on the left side. This had no effect on the paralysis. About July the 25th, there was a sudden complete right hemiplegia, with general signs of a chronic meningitis, squint, retraction of the head, and unconsciousness.

These features gradually passed away, but the hemiplegia continued with only slow improvement.

The right facial paralysis continued complete.

On September the 30th the left mastoid cavity was curetted out and a small sequestrum was found and removed. The right cavity was also curetted.

On October the 19th the voice became feeble and husky, and on October the 20th the child had a prolonged attack of crying followed by convulsions, mostly right-sided, and unconsciousness.

The convulsions subsided only after administration of chloroform, and recurred in a milder form later. Next day the child was much better.

A large temporal flap was turned down and the whole of the squama was removed on the left side. When the dura mater was turned down the lepto-meninges were found to be intensely œdematous, and a large quantity of cerebro-spinal fluid ran away. The brain bulged strongly through the opening. In the posterior part of the exposed area the cortex appeared of normal colour, but anteriorly, over what would represent the lower part of the motor area, the colour was blue, and there was clearly some kind of cyst. This was punctured, and was found to be an enormously dilated lateral ventricle. The fluid was allowed to run away slowly, the dura mater replaced, but not sutured, and the scalp wound closed. On the next day the child was sitting up, taking food, and quite lively. The wound healed absolutely well, in spite of much tension and bulging. The bulging continued and gradually became more tense.

On November the 3rd there was a recurrence of the fits. On November the 11th the child was once more anæsthetised and the scalp bulge was pierced by a long needle armed with No. 3 twist silk, the needle being passed right across the bulge and brought out through the skin some 2 in. beyond the edge of the old incision. Both ends of the silk were buried. One such line passed from above

and behind downwards and forwards emerging in the parotid region, two others led upwards into the parietal region.

There was an immediate and remarkable passage of fluid along the threads, producing an obvious œdema. The child again had no disturbance, but the amount of fluid passed continued so large that on November the 18th the left eye was still almost closed by swelling. This has gradually subsided. Since that date the child's general health has been excellent and she has regained some power in the right limbs.

Bacteriology.—The material from the original operation was kindly worked out by Dr. Eastwood. Typically tuberculous lesions were produced in guinea-pigs, and inoculation experiments on rabbits showed that the type of tubercle bacillus was "human." Two other cases of tuberculosis of the petrous similarly worked out have proved to be of the bovine type.

THE SEX DISTRIBUTION OF RICKETS.

By John Priestley, M.R.C.S.,
Senior School Medical Inspector, Staffordshire Education Committee.

In school medical inspection children are divided into "routine" and "specially presented." The former are the children who, whether healthy or ailing, come up automatically for inspection because they have reached a certain age, viz., 5–6, 8–9, or the leaving age; the "specially presented" are children brought forward by head teachers because of some supposed defect of health.

The inspection of the "routines," therefore, gives us the opportunity never before available for a precise estimation of the natural incidence of defects in different groups of children.

Such comparisons must be made circumspectly. The personal equation of the inspector must never be lost sight of. Inspectors are not equally observant; one who is keenly interested in a particular defect will find it in more cases than another less keenly interested, and so on. But this criticism does not apply to any comparison between boys and girls, for every inspector is all the time examining boys and girls in about equal numbers on the same days, under the same skies, and in the same mental attitude.

In regard to rickets we have usually limited our record to the number of marked deformities, knock-knees, bow-legs, marked

caput quadratum, etc., the cases that strike the eye; it is improbable that many cases are missed. The total numbers year after year, taking all the routine age periods together, have been singularly constant, viz., 1909, 1·4 per cent.; 1910, 1·6 per cent.; 1911 1·6 per cent.; 1912, 1·7 per cent.; 1913, 1·6 per cent.

Every year when boys and girls are compared there has been a difference in the proportionate number of cases in the two sexes.

Marked Cases of Rickets. Boys and Girls of 5–6, 8–9, 12–13, 13–14.

Year.	Total No. examined (boys and girls about equal).	Rickets. Boys. Per cent.	Rickets. Girls. Per cent.
1909	15,131	1·98	·83
1910	16,464	2·04	1·13
1911	19,948	2·0	1·09
1912	14,510	2·05	1·35
1913	9,215	2·16	1·12
Total	75,268	2·04	1·13

In 1912 a few routine children of ages other than 5–6, 8–9 and leavers are included. In the grand total there is some overlapping, a child of 5–6 in 1909 appearing again in 1912 as an 8–9, and so on.

Thus there is a difference in the incidence of rickets, or more correctly of post-rickety deformities, between boys and girls which is not quite in the ratio of 2 : 1, but not far from it.

The difference is just as strikingly shown when the minor cases of rickets are included. During 1909–10–11 Dr. Elizabeth J. Moffett, then on our school medical staff, carefully recorded all cases in which a trace or a suspicion of rickets could be detected. She was dealing with, roughly, 5000 examinees a year, boys and girls in approximately equal numbers. She found signs of rickets in different years in from 17 to 25 per cent. of children inspected.

As regards boys and girls her records were as follows:

Rickets—all degrees.

	1909. Per cent.	1910. Per cent.	1911. Per cent.
Boys	29·4	29·5	23·0
Girls	20·0	16·2	12·6

The general falling off in the numbers in the third year may possibly have been due in part to a little slackening of interest.

As the numbers examined in each year were approximately the same we may take the mean of these percentages, from which it appears that boys had 27·3 per cent. and girls 16·3, a ratio rather less than 2 : 1.

It seems probable, therefore, that rickets is more prevalent among boys than girls, and that this disease must be included with rheumatism, pulmonary consumption, all the graver nervous affections, and some other disorders, as diseases the incidence of which is influenced to a considerable degree by sex.

Philadelphia Pediatric Society.

January the 12th, 1915, W. N. Bradley, M.D., President.

Liquid Paraffin in Infants.—Dr. H. K. Hill described liquid paraffin as a tasteless, odourless, transparent mineral oil, recommended by Arbuthnot Lane and others for chronic intestinal stasis. When given in large doses he had observed excellent results in chronic constipation in infants. He had noted less satisfactory results in the initial treatment of severe gastro-enteritis, as castor oil seemed to produce a more thorough cleansing of the intestinal tract and the secondary constipating effect was desirable. In conjunction with lactic acid bacilli very remarkable results might be obtained in that group of diseases caused by the action of putrefactive and allied poisons absorbed from the intestines. Among these might be mentioned asthma, some forms of diabetes, migraine, cyclic vomiting, convulsions, chorea, enuresis, some forms of eczema, and many severe teething cases.

Pellagra in Childhood.—Dr. F. C. Knowles read a comparative study of pellagra in relation to the adult and child. He studied the age, sex, race, heredity influence, cutaneous, nervous, and gastro-intestinal manifestations of the disease. The diseases which preceded or were frequently found associated with pellagra in childhood were also discussed. The prognosis in childhood was mentioned, and a considerable number of references were given.

Dr. J. P. Crozer Griffith wished much to hear what Dr. Knowles had to say about the ætiology of pellagra from his study of the literature. He had been impressed by reading Sambon's publications to the effect that the disease was probably caused by the bite of the simulium. Since then other insects had been accused. It seemed pretty well recognised now that healthy corn had no effect in producing pellagra, but whether it was an infection transmitted through the bite of an insect or a food intoxication produced by the action of some mould was by no means known. He thought Dr. Knowles could perhaps give a summary of what he had learned by the study of the subject.

Dr. Knowles answered that the ætiology of pellagra still remained shrouded in doubt. He had attempted to compare pellagra in childhood

with the disease as observed in the adult. He had recently seen two cases in children.

Œdema complicating Gastro-enteritis.—Dr. John F. Sinclair read this paper, prepared by Dr. Joseph A. Speed and himself. They reported four case-histories.

Dr. Hill spoke of the possibility of using calcium chloride in place of sodium chloride in cases of œdema.

Dr. Bradley referred to the fact that infants with œdema did not always recover. He spoke of an autopsy he had recently performed in an infant with œdema, in which nothing was found to explain the condition.

Dr. Sinclair added that research work has shown that in only certain cases was it justifiable to use sodium chloride for œdema. It cannot be used in every case. He feels that toxins play a large *rôle* in the ætiology of œdema.

The Schick Toxin Reaction for Immunity in Diphtheria.—Dr. J. A. Kolmer read this paper, prepared by Dr. Emily L. Moshage and himself. They had studied a large number of individuals, upon whom the test had been performed, gave several tables to show their results, and concluded that this practical experience with a small diphtheria epidemic had increased their confidence in the toxin test as a means of detecting persons susceptible to diphtheria.

Dr. Griffith had been impressed by the two charts showing the increased percentage of Schick reactions in those who were suffering from scarlet fever and from diphtheria itself. If Dr. Kolmer was right, that the scarlet fever chart was an indication that patients with scarlet fever were more liable to contract diphtheria, it must be true, even to a greater degree, of that for diphtheria. This chart showed that even after fifty days over 50 per cent. of cases will give a Schick reaction. It was reasonable to suppose that this reaction must persist, perhaps for a long time; and he would like to ask whether this was not a confirmation of the belief that individuals who had once suffered from diphtheria had an increased liability to develop it again. Dr. Griffith was hoping for great things from this reaction, combined with the von Behring toxin-antitoxin treatment, in hospital practice. Both the University and Children's Hospitals gave a prophylactic dose of antitoxin to every child upon admission; yet there were many instances in which he hesitated to give this on account of the condition of the infant. In view of this and of the very short duration of protection which antitoxin gives, as shown by Dr. Kolmer's charts, it would be most desirable to be able to determine positively whether or not the child needed immunization, and then to treat it in some way which would give a much longer protection than the present method affords.

Dr. Hill referred to the pseudo-reaction, and asked Dr. Kolmer whether the reactions shown by the twenty nurses and physicians at the Municipal Hospital who were exposed so constantly to diphtheria but who did not contract the disease, might not have been pseudo-reactions, just as was seen in the case of the resident physician whom Dr. Park recently showed in New York, who was apparently immune.

Dr. Gittings said that these figures for susceptible adults were larger than those of Schick and hardly seemed to show the disproportion in susceptibility between children and adults which one would expect upon the the basis of clinical experience. The proportion of susceptible children

during convalescence from diphtheria also seemed astonishingly high if the disease itself were to confer any active immunity. He asked Dr. Kolmer whether or not Schick tests had been made after toxin-antitoxin immunization, for comparison both with the effects of antitoxin and with the effects of clinical diphtheria.

Dr. KOLMER spoke of one man with highly virulent bacilli in his throat—killing a guinea-pig—but without any clinical symptoms, whose Schick reaction showed him well protected from diphtheria. In the presence of symptoms, as an angina showing staphylococci or streptococci and diphtheria-like bacilli or a dirty discharge from the nose showing diphtheria-like bacilli in cultures, a positive toxin reaction indicated that the patient was susceptible and true diphtheria was a possibility; a negative toxin test, however, was of more value in excluding diphtheria in the diagnosis on a basis that the patient was probably immune. The pig test alone proved the harmfulness of the bacilli found. Dr. Kolmer had not yet used toxin-antitoxin mixtures except experimentally in the lower animals. He had not found any family predisposition to diphtheria that could not be explained upon other grounds. The work would indicate that, in general, persons recovering from diphtheria were at least just as susceptible to diphtheria as they were before the attack or as persons who had never had the disease. Pseudo-reactions were quite unusual, and personally he regarded all reactions evidently not traumatic as true toxin reactions.

The President then delivered the Annual Address.

Abstracts from Current Literature.

Medicine.

The cholesterin contents in the blood of children (*'Riv. di Clin. Pediat.,'* 1914, XII, *p.* 339).—**A. Filia** found as the result of numerous experiments that cow's milk is richer in cholesterin than human milk, and in the majority of cases the blood of infants reared at the breast is richer in cholesterin than that of hand-fed infants. He is of opinion that the latter fact may account for the undeniably greater resistance commonly observed in breast-fed children. It also seems probable that the cholesterin in the blood is not of alimentary origin, and that in artificial feeding some kind of action is produced which diminishes the absorption of cholesterin from the intestinal tract of the infant. VINCENT DICKINSON.

The blood in pertussis (*'Münch. Med. Woch.,'* 1914, LXI, *p.* 303).—**W. Schneider** examined thirty cases in children at weekly intervals from the time of their admission to hospital till their discharge, *i. e.* about a week after they had been free from paroxysms. The blood showed the following changes, which set in rapidly after the appearance of the catarrhal symptoms: (1) There was a general leucocytosis which lasted for three weeks and corresponded clinically to the height of the disease. It rose to an average maximum of 27,100 and then fell to normal on recovery. The highest number of leucocytes observed in uncomplicated cases was 39,400, and in complicated cases 85,800. (2) The lymphocytes in the first four weeks were relatively increased, on the average ranging between 58 and 63 per cent. The highest number was 86 per cent. in uncomplicated, and 79 in complicated cases. (3) The large mononuclears and transitionals also

showed a slight increase which, as a rule, amounted to 6·2 per cent. The highest figure was 10 per cent. The blood-picture possesses diagnostic, but little prognostic, value. J. D. Rolleston.

On forty-one cases of infantile Leishmaniosis observed at the pædiatric clinic at Palermo in the scholastic year 1912–13 (*'Gazz. intimaz di Med., Chir., etc.,'* 1915, xxiii, *p.* 4).—**G. di Giorgio.**—Four were children under one year, twenty-seven were in the second year, six in the third year, and four between three and five years. The sexes were equally affected. The largest number of cases occurred in the spring and early summer. The poorer classes were the chief sufferers, especially country people who lived under defective hygienic conditions in close proximity with domestic animals. With the exception of one acute case, all belonged to the subacute and chronic forms described by Jemma (*v.* British Journal of Children's Diseases, 1914, xi, *p.* 455). Blood examination showed that leucopenia, though frequently present, was not constant, about half the cases showed a normal number of white cells or a slight leucocytosis, the rest had leucopenia. Of the forty-one cases, four recovered, twelve died, and the rest were still under treatment or had been lost sight of. Cacodylate of iron was the principal drug employed in the treatment.

J. D. Rolleston.

The treatment of Leishmaniosis (*'La Pediatria,'* 1915, xxiii, *p.* 81).—**G. di Cristina** and **G. Caronia** have experimented in eight cases, of which details are given, with intravenous injections of 1 per cent. solution of tartar emetic in distilled water, using from 3 to 10 cgm. at intervals of two or three days. Five cases were cured and three greatly improved. In the children subjected to this method of treatment the general condition and blood condition underwent rapid improvement and sterilisation of the organism was finally effected. Examination of the splenic pulp during the treatment showed gradual diminution of the parasites and finally their complete disappearance. The mechanism of the action of the drug requires further investigation, but after the first injections a more or less apparent deformation of the cytoplasm of the parasites was observed, which gives rise to the presumption that a process of lysis takes place.

Vincent Dickinson.

Acute lymphatic leukæmia (*'Liverpool Med.-Chir. Journ.,'* 1914, xxxiv, *p.* 324).—**N. P. Marsh** reports three cases of acute lymphatic leukæmia which serve to illustrate the three principal types as described by Gilbert and Weil, viz., (1) the rare typical acute leukæmia with enlargement of the lymphatic structures as the prominent feature; (2) the hæmorrhagic form, characterised by an intense hæmorrhagic diathesis; (3) the buccopharyngeal, *i. e.* the anginous and pseudo-scorbutic form, with hæmorrhagic infiltration and necrotic ulcerative processes into the mouth and pharynx. Case 1: A boy, aged 11 years, commenced bleeding from the gums one month after the extraction of a tooth. The oozing continued and petechiæ appeared on the trunk and limbs. The inguinal glands alone were enlarged, and the spleen could not be felt. Vision was impaired and hæmorrhages were found in both fundi. The urine contained blood microscopically. Blood count: Reds 800,000, whites 25,000, Hb. 10 per cent. The reds showed marked poikilocytosis and occasional nucleated cells. Of the whites 94 per cent. were lymphocytes (large 28 and small 66 per cent.). Horse-serum and adrenalin (both locally and internally) and other measures failed

to arrest the bleeding, and after profuse hæmorrhage from the nose and mouth the patient died from exhaustion fourteen days after the first appearance of hæmorrhage. Case 2: A girl, aged 4 years, had not been well since an attack of bronchitis three months previously. Two and a half months later a suppurating gland in the submaxillary region was incised and a carious tooth extracted, after which she had a severe hæmorrhage and bruised easily. There was a large mass of glands in the right cervical region and smaller glands in the axillæ and groins. The bronchial glands also appeared to be enlarged, but the liver and spleen were not increased in size. Temperature 103° F. A blood count was apparently not made, but a film showed lymphocytes 93 per cent. of which 75 per cent. were large and 18 per cent. small. Iron, arsenic, horse-serum, etc., failed to arrest the disease, death occurring in a few days. Case 3: A girl, aged 3 years, who had always been delicate, had had a severe epistaxis and passed blood *per rectum* two months previously. Subsequently more hæmorrhage occurred from the bowel, but not from other sources. The patient rapidly became anæmic and ran a high temperature. She was rickety and presented some petechial and subcutaneous hæmorrhages. No glands appeared to be enlarged, and the liver and spleen could not be felt. A blood film showed an enormous increase in the number of lymphocytes, with an undue preponderance of the large variety. Treatment was of no avail, and she died a few days later.

T. R. Whipham.

The ætiology of infantile splenic anæmia (*'La Pediatria,'* 1914, xxii, *p.* 752).—**G. Caronia** gives details of thirty cases which, taken in conjunction with recent observations by di Cristina and Adamo, lead him to conclude that the morbid entity named infantile splenic anæmia is due in the large majority of instances to hereditary syphilis, either alone or in association with tuberculosis; in a less number of cases to tuberculosis alone. Both ætiological factors may be explained in three ways: (1) By transmission of the disease from the parents to the offspring with consequent manifestations in organs congenitally more susceptible; (2) by production of a congenital dystrophy on the part of the hæmatopoietic organs by the action of the maternal toxinfection on the organ in process of development; (3) by influence of toxins transmitted by the milk of the mother to the child on the hæmatopoietic organs congenitally predisposed. Although most cases of infantile splenic anæmia are related to syphilis or tuberculosis, the possibility of other ætiological factors cannot be excluded, and among the principal of these may be mentioned chronic sepsis. Vincent Dickinson.

Anæmia with enlargement of the spleen; splenectomy; cure (*'Practitioner,'* 1914, xciii, *p.* 660).—**J. S. McKendrick.**—A girl, aged 8 years, had received three years' medical treatment without result, but was cured by removal of the spleen. The author was doubtful of the nature of case, but the blood count seemed to show that it was one of splenomegalic anæmia, a name suggested by Dr. Weber, in which there is a marked anisocytosis, poikilocytosis, polychromatophilia, normoblasts, a few myelocytes and white cells above 7000 per c.mm. F. R. B. Atkinson.

Splenomegaly; splenectomy (*'St. Bartholomew's Hosp. Rep.,'* 1914, l, *Pt.* 1, *p.* 7).—**H. Thursfield** and **A. E. Gow** have written a very full and interesting paper on splenectomy in cases of enlargement of the spleen. After discussing the effects of the removal of a damaged or healthy spleen, which they conclude amounts to merely a temporary alteration in the mor-

phology of the peripheral blood, they discuss the subject of splenomegaly, and present what to many is an intricate matter in a clear and intelligible light. Much confusion exists as to the relationship of Banti's disease to splenic anæmia, the former syndrome consisting of a splenic anæmia which is followed in the later stages by cirrhosis of the liver, while the latter disease progresses to a fatal termination without cirrhosis. The authors consequently prefer to speak of both conditions as splenic anæmia, and to allow that the terminal stage of a single disease may be either a progressive anæmia or a cirrhosis of the liver. The diagnostic points of the disease are a chronic primitive splenomegaly, a diminution in the number of erythrocytes and absence of erythroblasts, a low colour-index, a leucopenia with absence of myelocytes, a diminished or normal fragility of the red cells, and an absence of enlargement of the lymphatic glands. In cases of anæmia the authors lay stress on the necessity for determining the corpuscular fragility, and point out that an increase is characteristic of the condition known as acholuric jaundice. Another point which they emphasise is the large number of red cells—5,000,000 or over—which occurs in cases of syphilitic enlargement of the spleen. Details of the cases of splenectomy which they have collected from the literature and their own experience are given in tabular form, and the writers consider that the mortality of the operation in all forms of disease should not exceed 10 to 12 per cent. In splenic anæmia they are of opinion that the operation should be undertaken as soon as the diagnosis is established, without waiting for the development of the severer grades of anæmia or for hæmatemesis. In cases of congenital acholuric jaundice splenectomy has been followed by very good results so far as is known at present, and in pernicious anæmia some noteworthy results have been obtained. In other diseases the effects of the operation cannot at present be determined with certainty, but the records given are full of interest and merit serious consideration. As regards the function of the spleen in blood diseases the authors are of opinion that the organ exerts no direct hæmolytic action, and that no one pathological change can underlie such different diseases as congenital acholuric jaundice and pernicious anæmia. They incline to the theory put forward by Klemperer and Hirschfeld that the spleen exerts a governing influence upon the erythroblastic activities of the bone-marrow by means of an internal secretion, and that in diseased conditions this influence is disordered. Thus in splenic anæmia there would be a disorder of the internal secretion giving rise to a diminution in the erythroblastic activity, in acholuric jaundice to the production of red corpuscles deficient in resisting power to hæmolysins, in pernicious anæmia to the production of normoblasts and megaloblasts, and in all diseases to an interference with the elaboration of hæmoglobin. It must be supposed that, as in the case of other internal secretions, there may be disorder arising from deficiency or from excess of secretion, or from infective processes, or again from metabolic disturbances The paper is a valuable contribution to the subject and should be read by all who are interested in the diseases and the pathology of the spleen. T. R. Whipham.

Blood-pressure in normal children (*'Am. Journ. Dis. Child.,'* 1914, viii, *p.* 257).—**C. F. Judson** and **P. Nicholson** made about 2300 observations on children between the ages of 3 and 15 years by the conjoint use of auscultation and modified Erlanger methods. The systolic pressure showed a slight but gradual rise from 3 to 10 years. From 10 to 14 years the increase was more abrupt, with a rapid rise in the 14th year. The systolic

pressure varied from 91 mm. in the 4th year to 105·5 mm. in the 14th. The diastolic pressure on the other hand remained at an almost uniform level, viz. betwen 65 and 71 mm., and the pulse-pressure increased progressively and proportionately more than the systolic pressure during the corresponding period, viz. from 26·2 mm. at 3 years to 38·1 mm. at 15. The writers lay stress on the importance of taking the diastolic pressure in every case and state that determination of the pulse pressure, indicating as it does the peripheral resistance, is the most important point to be determined in children. J. D. Rolleston.

The blood-pressure in anæmia in infancy (*'Amer. Journ. Dis. Child.,'* 1914, viii, *p.* 270).—**J. L. Morse** and **E. T. Wyman** first made sixty-two blood-pressure observations on fifty normal babies in the first two years of life, and found that the average systolic pressure was 90 mm., the average diastolic 66 mm., and the average pulse pressure 25 mm. There was a slightly higher pressure, both systolic and diastolic, in males than in females. Both the systolic and diastolic pressures were somewhat higher in the second than in the first year, while the pulse pressure was the same. Twenty-seven observations were also made on twenty-five poorly nourished, but not anæmic, infants. The average systolic pressure was 89 mm., the average diastolic 53 mm., and the pulse pressure 36 mm. Fifteen observations were made on ten infants suffering from anæmia. The systolic pressure was somewhat higher than in the first two groups, varying in the severe cases from 100 to 124 mm., while the diastolic was considerably lower, viz., 30 to 0 in the severe cases, and the pulse pressure much higher, viz. 80 to 124 in the severe cases. There was no definite relation, however, between the amount of pulse pressure and the degree of anæmia. No conclusions could be made as to the cause of these phenomena. J. D. Rolleston.

Congenital cyanosis without auscultatory signs (*'Ann. de Méd. et Chir. Inf.,'* 1914, xviii, *p.* 482).—**Grandjean.**—In cases of congenital cyanosis with a complete absence of any cardiac murmur, one habitually finds pulmonary stenosis and equality of thickness of muscle in the two ventricles. In the very young one also may find absence of the pulmonary artery or transposition of the great vessels. The heart often appears larger and heavier than normal, and the thickness of the two ventricles is about equal, and there is deficiency of part of the inter-ventricular septum. The pulmonary artery is diminished in calibre for its whole extent, or there may be a cicatricial ring at its commencement. That there is no murmur is due to the equality of pressure in the two ventricles, and to uniform diminution of the pulmonary artery. Cyanosis appears at birth, and then is often considered to be due to apparent death, but when respiration is established the blueness persists. The extremities remain cold, and there may be attacks of suffocation. Percussion shows the heart to be enlarged to the right, but no thrill or murmur is present. Tachycardia is frequent. Prognosis depends on the kind of malformation. In the absence of the pulmonary artery, life rarely lasts more than a few weeks or months; but with pulmonary stenosis and inter-ventricular perforation life may be prolonged up to fifteen years or so. The condition is one of lessened resistance, the lungs, being insufficiently nourished, may be attacked by tuberculosis or broncho-pneumonia; measles is often fatal. J. Porter Parkinson.

Insufficiency of the pulmonary valve (*'Amer. Journ. Med. Sci.,'* 1913, cxlvi, *p.* 541).—**H. B. Allyn** describes two cases of pulmonary regurgitation. The first was in a boy, aged 15 years. All the valves of the heart

showed endocarditis, the aortic being incompetent as well as the pulmonary. The pulmonary valve cusps were four in number. The boy had suffered from rheumatism, but whether the endocarditis was regarded as purely rheumatic or as complicated by a secondary infection is not stated. The second case was a woman, aged 36 years. The heart post mortem showed mitral stenosis and aortic and pulmonary endocarditis. In this case there was a positive Wassermann reaction and no history of rheumatism. The author gives a *résumé* of the literature bearing on the subject.

REGINALD MILLER.

Persistent common arterial trunk in an infant, aged 6 months (*'Jahrb. f. Kinderheilk.,'* 1914, LXXX, *p.* 327).—**Z. von. Bókay.**—The infant had cyanosis of the face and extremities, but no clubbing of the fingers. There was no thrill to be felt nor murmur to be heard. Red cells numbered 7,000,000 and white cells 6000. Death took place suddenly from heart failure. The autopsy showed a persistent common arterial trunk, defect of the posterior part of the inter-ventricular septum, patent foramen ovale, persistent ductus arteriosus, hypertrophy and dilatation of the right ventricle and atrophy of the left ventricle. J. D. ROLLESTON.

Diagnosis and prognosis of congenital heart disease (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 185).—**C. H. Dunn.**—Out of 48 cases the diagnosis of congenital heart disease made in life was confirmed post mortem in 40, and in 8 a congenital heart lesion was found at necropsy, though careful examination during life had shown no evidence of a cardiac lesion. In 7 of these 8 cases the lesion was a patent foramen ovale alone, and in 1 a small opening in the interventricular septum as well as a patent foramen ovale. The lesions in the 40 cases were: Pulmonary stenosis alone, 16 cases; deficient ventricular septum alone, 3; patent foramen ovale alone, 2; patent ductus arteriosus alone, 1; congenital abnormality of the pulmonary artery, 1; deficient septum with open ductus, 9; deficient septum with pulmonary stenosis, 7; pulmonary stenosis with open ductus, 1. The following rules for diagnosis are given: (1) A case showing cyanosis with enlargement of the cardiac dulness or palpable thrill or both is one of pulmonary stenosis. If the child dies shortly after birth, the lesion is most probably pulmonary stenosis alone. If the baby survives, the pulmonary stenosis is probably combined with some other lesion. If the murmur is transmitted into the neck vessels, or is of "humming-top" variety, the additional lesion is probably open ductus arteriosus. If the murmur has neither of these characters, the lesion is probably deficient ventricular septum. (2) A case showing murmur and enlargement without cyanosis is probably one of deficient ventricular septum. If the murmur is not transmitted, this lesion exists alone. If the murmur is transmitted or has a "humming-top" character, the lesion is probably combined with open ductus. (3) A case showing murmur without cyanosis or enlargement, especially if the murmur is transmitted into the neck vessels, is probably one of open ductus arteriosus. If the murmur is of the "humming-top" character, this diagnosis is almost certain. The prognosis in pulmonary stenosis alone is grave, and death takes place usually soon after birth. In open ductus arteriosus the prognosis is very good. The patient develops normally, and signs of cardiac disease eventually disappear. In all the other forms of congenital heart disease there is evidence that the patient may survive to adult life, though the development and nutrition suffer to a varying degree, and the children are less resistant, especially to gastro-intestinal and infectious diseases. J. D. ROLLESTON.

Endocarditis in children (*'Arch. of Ped.,'* 1914, xxxi, *p.* 657).—**F. M. Crandall,** while fully appreciating the importance of myocarditis in the severer forms of heart disease in children, thinks that in some cases running a more favourable course the endocardium may be much more affected than the heart muscle. He regards as symptoms of myocarditis, irregular action of the heart or palpitation, syncope, cyanosis, and præcordial distress. Stress is laid upon the rapidity with which even a loud endocardial murmur may develop; a case in which such arose in eighteen hours is quoted.

Reginald Miller.

Chronic infective endocarditis (*'Arch. of Ped.,'* 1914, xxxi. *p.* 691).—**Eleanor C. Jones** and **Berta M. Meine** describe a case of a girl, aged 20 years, who suffered from chorea, followed by rheumatic fever and endocarditis, the latter causing death. Bacteriological findings showed staphylococci and a coarse Gram-positive streptococcus, which the authors think gets into the system in these cases by the tonsils.

F. R. B. Atkinson.

Bradycardia and tachycardia in young children (*'Interstate Med. Journ.,'* 1915, xxii, *p.* 57).—**J. Zahorsky** reports two cases: (1) That of an infant, aged 15 months, who was small and poorly nourished and of a cyanotic hue. The pulse-rate was 54. The heart's apex was visible in the fifth interspace in the mammillary line and a loud systolic murmur was audible all over the chest. The terminal phalanges of the fingers were not clubbed, but were dusky red in colour. The fontanelle was large and the eyes were prominent. The writer considers the case to be one of heart block, but does not appear to have proved it by means of an electrocardiogram. (2) That of a girl, aged 3 years, who was the subject of paroxysmal tachycardia. For eight months she had had recurrent attacks of prostration following influenzal bronchitis. In the attacks, which lasted about two weeks, she lay prostrated, ate very little, vomited occasionally and breathed rapidly. When seen in the fourth attack the pulse-rate was over 200, the face was swollen and the eyelids puffy. The body had a slightly œdematous appearance and the liver was swollen. Respirations were 72, and there was a paroxysmal cough, but only an occasional sibilant *râle* in the lungs. The blood presented nothing unusual. The urine was 1010 and contained a trace of albumen and hyaline casts. Belladonna, adrenalin, bromides, and digitalis all failed to have any impression on the cardiac disturbance (*vide* British Journal of Children's Diseases, 1914, xi, *p.* 241.)

T. R. Whipham.

Epigastric route for pericardiac paracentesis (*'Journ. des Praticiens,'* 1913, xxvii, *p.* 329).—**G. Blechmann** describes the various routes which have been made use of in aspirating pericardial effusions, and decides in favour of the sub-xiphisternal route as advocated by Marfan in 1911. In this procedure the extreme tip of the xiphoid cartilage is found by the index finger of the left hand, and the trocar is introduced under this, care being taken to keep exactly in the middle line. After passing along the posterior surface of the xiphisternum for a distance af 2 cm., the point of the needle is directed obliquely backwards and upwards until the pericardium is reached. It is claimed that this method reaches with the least possible danger and difficulty that part of the pericardial sac in which most fluid accumulates. In one patient the author successfully tapped the pericardium seventeen times.

Reginald Miller.

The use of strychnine and caffeine as cardio-vascular stimulants in the acute infectious diseases (*'Arch. Int. Med.,'* 1915, xv, *p.* 458).—**L. H. Newburgh,** from examination of patients in all stages of acute infectious diseases and in a few others who exhibited very low blood-pressure, came to the following conclusions: (1) There is no evidence that the vaso-motor apparatus is injured in the acute infectious diseases. (2) The evidence at hand does not permit us to say whether the functional activity of the myocardium is seriously impaired in the acute infectious diseases. (3) Strychnine sulphate in medicinal doses does not increase the outflow from the heart, slow the pulse, or materially raise the blood-pressure; there is no logical basis for its use as a cardio-vascular stimulant. (4) Caffeine-sodio-salicylate in the doses employed (1½ gr. to 5 gr. subcutaneously) does not raise the blood-pressure or slow the pulse. J. D. Rolleston.

School Hygiene.

Biometric and eugenic studies of elementary school children (*'The Child,'* 1914, iv, *p.* 495).—**J. F. Halls Dally** describes the clothing of 948 Jewish children. 112 of 638 boys examined were properly, and 526 insufficiently or over-clothed. Under-clothing was sufficient in 122, excessive in 37, and insufficient in 479. Outer clothing was sufficient in 569, excessive in 7, and insufficient in 62. As examples of insufficiency of clothing are quoted 38 boys clad in shirts, trousers, and coat, as over-clothing a case in which a boy was clothed in vest, shirt, jersey, stays, combinations, trousers, waistcoat, and coat. 113 of 310 girls examined were sufficiently clad, and 197 insufficiently or over-clothed. Under-clothing was sufficient in 144, excessive in 89, insufficient in 77. Outer clothing was sufficient in 238, excessive in 57, and insufficient in 55. As an example of deficiency a girl clad only in a vest, chemise, and dress is noted. As one of excess, a girl wearing vest, chemise, combinations, two petticoats, three bodices, shirt, jersey, and dress. A shirt in boys and a chemise in girls are much more frequently worn than a vest in either sex. If the under-clothing is excessive the increase is usually of chemises in girls and shirts in boys. Cotton is the commonest material of which vests and shirts are made, flannelette next, while cotton-wool mixture, wool, and flannel, are very infrequent.

Christopher Rolleston.

Review of four years' school work (*'Wien. klin. Rundschau,'* 1914, xxvii, *p.* 367).—**L. Wolfer** examined the teeth, eyesight, and for scoliosis, 5500 school children during this period. Sixty-five per cent. of all pupils suffered from bad teeth, and as a result of instruction to both parents and children this number had fallen to 56·6 per cent. The cases in Class I amount to 75 per cent. and these fell to 49·7 per cent. when the higher classes were reached. Abnormal eyesight increased as the higher classes were reached from 16 per cent. to 32 per cent., but fell as a result of instruction to the parents and children from 25 per cent. in all classes to 17·6 per cent. The scoliotic curve increased from Class I to Class III when it began to fall steadily. Proper care and instruction of all classes of pupils lowered this curve from 33·1 per cent. to 17·9 per cent. F. R. B. Atkinson.

The true aim and purpose of the routine inspection of children in school (*'Journ. State Med.,'* 1914, xxii, *p.* 693).—**John Priestley** points out that by the routine inspection of children in school is meant the medical

inspection of every child attending school which we are required by the Board of Education to perform three times during the child's school life. These routine inspections have succeeded in drawing to themselves a disproportionate amount of attention. Starting with the fact which the statistics of the medical inspection in England have abundantly demonstrated, viz. that school medical inspection is mainly, if not entirely, concerned with vast numbers of chronic ailments handicapping children in their life and education, but not bad enough to prevent attendance at school, the great central work of medical inspection is to secure the proper treatment of these ailments. In this beneficent work the routine inspection plays its part, and its true aim and purpose is to segregate and classify the mass of chronic ailments, so that each case may be carefully studied and followed up. J. Allan.

The school and the home (*'Journ. State Med.,'* 1914, xxii, *p.* 689).—**H. R. Kenwood** makes a strong plea for a greater co-ordination of home and school life, which would tend to benefit the child mentally, morally, and physically. This co-operation of the home with the school is more particularly necessary for the moral training of the child—of which hygienic training is but a form; but it is also necessary for the maintenance of the child in the best conditions of discipline, feeding, recreation, and of rest to benefit to the full from school education. The author briefly sketches how such interchange between home and school could be carried out, and a necessary provision would be the appointment of a "school home visitor." He remarks that the Board of Education has issued excellent counsel to teachers with reference to their duties to the child; it would be helpful if a simple statement were issued to parents, indicating the respects in which their co-operation is needed in the educational interests of their offspring.

J. Allan.

The medical treatment of school children in rural districts (*'Journ. State Med.,'* 1914, xxii, *p.* 602).—**A. E. Williams** points to the difficulties of the medical treatment of school children in scattered country districts, and discusses the methods adopted in Flintshire for dealing with children of school age suffering from defective vision, dental caries, ringworm, and other skin diseases, verminous conditions, etc. J. Allan.

Estimation of physique and stamina for school purposes (*'Lancet,'* 1915, i, *p.* 115).—**A. A. Mumford** points out that by "physique" we generally imply the attainment of such bodily structure and organisation as enables a person to put forth mechanical energy through the muscular system; by "stamina" we generally imply the capacity for sustained vital activity, particularly when endurance has to be sustained against disintegrating influences, whether of strenuous work or of disease. Suggestions are made as to standards of physique and stamina. The estimates or criteria suggested by the experience of medical inspection and examination of adolescent children attending school and hospital, tend to separate into two groups: (1) Those which depend on the rate and degree of bodily development; (2) those based on standards of cardiac efficiency. Further estimates of physique and stamina may be made: (*a*) By examination of the respiratory apparatus, (*b*) from the condition of the musculature of neck and spine, (*c*) from a consideration of the general muscular build. There are now practically three natural physiological types of the neuromuscular system. (1) Adapted for the exhibition of massive weight. (2) Adapted for both bodily agility and bodily strength. (3) The third type

needs particular care and supervision during school life if he is ultimately to put forth his full innate powers. The larger limb muscles and the bony frame work are comparatively feebly developed. The nervous energy, though it may be considerable in amount, is irregularly distributed and tends to manifest itself either in some special handicraft or in some special intellectual channel, such as great language facilities, or its near ally, the mathematical faculty, or great imaginative faculties. Regarding the physique of the modern secondary day-school boy (in Manchester), the author says that careful comparison shows that the modern boy is taller, broader-chested, and heavier than the boy of a generation ago. He also maintains his level in athletic out-door activities, and more than maintains them in university attainments. J. Allan.

Discussion on rheumatic infections in relation to school life (*'School Hygiene,'* 1915, vi, *p.* 1).—**F. J. Poynton** emphasises the importance of the disease by stating that the foundations of mitral stenosis, which is usually fatal before forty-five, are laid, as a rule, in the first fourteen years of life. Tonsillar infection he regards as very important. The *Streptodiplococcus rheumaticus* can be cultivated from cases of acute angina and from the crypts of enlarged unhealthy tonsils. Further, acute rheumatism often follows tonsillotomy. Yet, on the whole, enucleation of the tonsils in the rheumatic is recommended, and the collection of facts demonstrating the after-effects of this operation on the life-history of rheumatic children is strongly urged. Chorea is regarded as a meningo-encephalitis due to the strepto-diplococcus, which has been recovered from the cerebral tissues even when endocarditis is absent. Chorea is a disease of the poor; it is rare in the capitalist class. No importance is attached to diet or to oral or dental diseases.

James Kerr stated that the majority of children labelled overpressed, anæmic, or tubercular are really rheumatic. He laid stress upon heredity, marked anæmia, and pain about the hamstrings as highly suspicious of rheumatic infection. Nervous symptoms, even when true chorea is not present, require exclusion from school. Inquiry cards on all cases of rheumatism are to be issued with full details as regards signs, symptoms, and a history of the facts bearing on the disease.

F. Langmead investigated 2556 children, 844 being boys, 838 girls, and 874 infants of both sexes. 59 boys and 74 girls—a total of 133 and a percentage of 5·2—were classed as definitely rheumatic. This number did not include cases of chorea or severe uncompensated heart-disease which were away from school. 115 of the 133 rheumatic children showed some sign of cardiac disorder at the time of examination. The mitral valve was affected in 59 and the aortic in only 1.

J. Graham Forbes had found the *Strepto-diplococcus rheumaticus* of Poynton and Payne in a small number of cases, but it is doubtful if this organism is the sole specific bacterial factor in the production of rheumatic lesions. *S. salivarius* and *S. fæcalis* have both produced endocarditis and arthritis when injected into animals.

J. F. R. Shrubsall found that 4679 out of 204,113 children inspected in 1911 showed physical signs pointing to cardiac affection. The frequency among "leavers" is twice as great as among entrants. Of 743 cases of cardiac disease admitted to the invalid schools as many as 536 were cases of mitral incompetence, 26 of mitral stenosis, 108 of double mitral disease, 41 of aortic and mitral disease combined, 28 of aortic incompetence, and 4

of aortic stenosis. The period between the initial symptoms and the appearance of definite signs of heart-disease in no case exceeded four years, and on an average was under eighteen months. 118 cases of congenital disease were investigated. 43 of these, or 26·5 per cent., were cases of pulmonary stenosis; 27, or 22·9 per cent., were examples of patent septa; 31, or 26·4 per cent., presented basal systolic murmurs—suspicious signs of patent septa; a persistent ductus arteriosus was present in 3, or 2·5 per cent.; and aortic stenosis in 14, or 11·9 per cent. Definite cyanosis was noted in 57·6 per cent.; in 5·9 per cent. there was marked pallor, and in 2·5 per cent. a florid complexion. Notable clubbing of the fingers occurred in 49·2 per cent. Eight to 15 per cent. of the cases admitted to the invalid schools have died, while 30 per cent. have been able to return to the ordinary schools. The maximum number of cases occur in the central areas of London. Poor areas and frequency of heart cases coincide in certain localities. Cases of heart-disease were found to be grouped along the course of old river valleys or water-courses, such as the Wandle, Ravensbourne, Effra, Fleet, Westbourne, and Regent and Surrey Canals.

CHRISTOPHER ROLLESTON.

Medical inspection in relation to special schools (*'Journ. State Med.,'* 1914, XXII, *p.* 594).—**E. T. Roberts** maintains that the two chief objects which must be considered in the course of medical inspection are: (1) Improving the health of the child where necessary, so that the greatest benefit may be gained from the education provided in the ordinary school; and (2) where the abnormal child cannot be made normal, or only so after months or years of treatment, then, if he be not too ill for any education, the special school must be selected which is best suited to his mental and physical conditions. After discussing the routine of medical inspection in Glasgow the author describes under the following heads the means for dealing with defective children: (1) Schools for mentally defective children; (2) schools for physically defective children or invalid schools; (3) residential open air schools; (4) schools for semi-deaf and semi-mute children; (5) blind children or partially blind children; (6) truant children; (7) industrial schools; (8) Clyde industrial training ship "Empress" for destitute and homeless boys. In conclusion he briefly refers to the provisions made in his district for the medical and dental treatment of necessitous school children.

J. ALLAN.

The present position of ophthalmology in school hygiene (*'Med. Press,'* 1914, II. *p.* 218).—**R. A. Askins** emphasises the importance of spectacles in the conservation of vision in school children, and makes a strong plea for their more scientific employment. He urges (1) that the school doctor must be a trained ophthalmologist. Till this is the case we can have little hope of good eye work being done in schools. (2) That all cases of myopia should be picked out and receive a much more careful supervision than is the case at present. The ophthalmologist will discover more cases of myopia in the infant school than he will anticipate. All cases of myopia in the upper school should be known, got into glasses, and kept under very careful supervision, especially with a view to levelling up the glasses. (3) The recognition and careful consideration of cases of hypermetropia, and especially before ordering glasses for lower hypermetropia, the estimation of the degree of the defect being a primary consideration. Secondly, the substitution of the principle of encouraging the development

of the ciliary muscle rather than taking its work from it. No hard and fast rule can, of course, be laid down. Every case must be dealt with on its own merits, including the physical condition of the child, the symptoms produced, and the degree of hypermetropia. (4) As to squint. This problem can never be dealt with satisfactorily until it is, to some extent, at any rate, taken over by the school doctor. Many cases require supervision extending over long periods, and treatment that can only be carried out in school—*e. g.* orthoptic treatment. Till this is done thousands of eyes will be let go irretrievably blind. J. Allan.

The education of the semi-blind (*'Glasgow Med. Journ.,'* 1914, II, *p.* 417).—**W. B. Inglis Pollock** divides children of this class into two groups. The first group is composed of children suffering from various diseases of the eyes, in which the eyesight is so defective that they are unable to read ordinary print or even specially large type. The second group is composed of children suffering from excessively high degrees of myopia. They are able to read ordinary print by holding it close to the eyes, which increases their myopia, and thus a vicious circle is set up. Children suffering from these diseases of the eyes are being treated by educational authorities in three different ways. By the first method they are permitted to attend school, but are not allowed to do any near work. By the second method children with serious defects of vision or diseases of the eye may be entirely excluded from school. By the third method such cases may be sent to a school for the blind. The author supports the treatment of such children in classes for the semi-blind devised by Bishop Harman, who lays it down as an absolute essential for success that the class shall be placed in an ordinary school for normal children and worked as an integral part of this school. Oral teaching is given with the normal children for such subjects as can be taught orally. All literary work must be learned without books, paper, or slate. A full use is made of every kind of handicraft that will develop attention, method, and skill with the minimum use of the eyes. Drill and games enter largely into the curriculum. In the opinion of the author the establishment of such classes allow children with serious defects of vision to obtain a good education, with all the benefits of regular school work. The medical treatment they may be receiving does not interfere with their work, nor do these special methods of education harm their eyes. The children only require to attend their dispensary or school clinic once a month in many cases. Many of the parents welcome the classes, since by these means their children resume school attendance, and they help by watching the children at home. Each case should be watched carefully. Their myopia or disease will probably improve to such an extent that there will be little fear of its progressing. The worst cases will pass the critical period of seven to fourteen years, when the eyes are soft and tender, receiving an all-round education, but without books. The establishment of such classes will undoubtedly act as a powerful preventive of many of the cases of separation of the retina and macular atrophy resulting from myopia, which end in blindness, and are commonly seen in our hospitals and in private practice. J. Allan.

The economic importance of diseases of the ear in school children (*'New York State Journ. Med.,'* 1914, XIV, *p.* 368).—**J. E. Sheppard** after reviewing this important question, comes to the conclusion that diseases of the ear seem to be of economic importance in school children, because: (1) In their acute forms they lead to a certain amount of absence from school, and

absences are a most potent factor in retardation; (2) in their suppurative forms they become a distinct menace to the life of the individual; (3) in their more chronic forms they result in defective hearing, the physical defect constituting the greatest bar to progress in school; (4) through impairment of hearing they cause a large proportion of the total number of defectives and incorrigibles, truants, and idlers, a portion of whom go later to join the ranks of the criminal classes, becoming an expense and a charge to the State reformatories and prisons; (5) through impairment of hearing they swell largely the ranks of the so-called "repeaters," to educate whom costs an entirely disproportionate amount, besides interfering materially with the education of their normal hearing class mates; (6) by virtue of their causation, through impairment of hearing, they are an element in the production of stoop shoulders and flat chests, which result in increased liability to tuberculosis; (7) finally, sufferers from impaired hearing require for their adequate education separation from the normal hearing, and teaching in limited classes, and with extreme deafness residence and teaching in special institutions where articulation and lip-reading must be taught in order to avoid the otherwise resulting deaf-mutism. J. Allan.

Dental clinics (*'Journ. State Med.,'* 1914, xxii, *p.* 426).—**Lewis Williams** describes the routine of examination and treatment. He believes that dental treatment of school children is one of the most important branches of preventive medicine, and he looks forward with confidence to the time when all children will leave school possessing sound dentures. The application of dental treatment not only relieves much pain and suffering on the part of the children, but it provides the keynote to perfect mastication, efficient digestion, and assimilation of food. It is conducive to a condition of good health and better physique, it is a valuable preventive against disease, and, lastly, it secures for children a physical condition which enables them to enjoy life and attend school regularly. J. Allan.

Reviews.

Études cliniques sur l'insuffisance surrénale, 1898–1914 (Clinical Studies on Adrenal Insufficiency). By Émile Sergent, Médecin de l'Hôpital de la Charité. Pp. 494. Paris: Maloine, 1914.

The author is well known for his work on renal inadequacy, especially perhaps for the sign of this condition, "the white line," which is exactly the reverse of the well-known *tache cérébrale*, and was first observed in the pseudo-meningitic form of acute adrenal inadequacy. In 1898 together with Bernard he began to evolve the conception of acute adrenal inadequacy and to separate it from Addison's disease, and since then he has steadily worked at the subject. The present volume is a collection of his forty-one previous contributions, and is divided into four parts; in the first, adrenal inadequacy is defined and described; in the second, its clinical characters and diagnosis are dealt with; the third is devoted to the part played by this condition in various diseases, such as infective fevers, chorea mollis, cardiac failure, the grave vomiting of pregnancy, tuberculosis, and in the severe symptoms sometimes seen after injection of salvarsan; and the fourth contains the practical application of the conception of renal inadequacy or

the therapeutic uses of adrenal gland substance and adrenalin. In the clinical section the pseudo-meningitic and encephalopathic forms of acute adrenal inadequacy are described, and the "white line" sign is defended against the adverse criticisms in which Bernard has taken a prominent part. The therapeutic section contains much interesting matter; in cases in which asthenia and depression are the most prominent symptoms the extract of the adrenal gland as a whole should be given, either fresh (1½–2 grammes daily) or as the dried extract, such as Carron's (one to three cachets of 0·30 grammes daily); when low blood-pressure is the predominant feature, especially in typhoid fever, adrenalin solution (20–30 minims of 1 in 1000 solution) is sufficient. Except in shock and syncope, when hypodermic injections are indicated, adrenalin should be given by the mouth. The account of the author's views is clearly and attractively written.

H. D. R.

Der Salvarsantod. Seine Ursache und seine Verhütung. Intravenöse oder intramuskuläre Salvarsaninjection? Von Dr. Carl Schindler. Mit 5 Tafeln und 1 Abbildung im Text. Berlin: S. Karger, 1914. Pp. 184. Price M5.80.

If salvarsan has done nothing else it has enriched the literature of toxicology and morbid anatomy. Dr. Carl Schindler attributes death from salvarsan to the direct effects of arsenic on the circulatory system, causing stasis, thrombosis, and hæmorrhage. Thus, even some German writers now acknowledge the toxic effects of salvarsan—a fact long ago recognised by French observers. Schindler points out that most of these fatalities have occurred after intravenous injection, few after intra-muscular injection of an aqueous solution of salvarsan, and none after injection of an oily suspension. In fact, the present book is a plea for intra-muscular injection of a 40 per cent. oily suspension known as "Joha." The author says he has used this for three and a half years, and considers its effects as good as those of intravenous injection, without the danger of the latter. The action of intravenous injection is short and insufficient, and hence has to be frequently repeated; the action of intra-muscular injections, on the other hand, is slower and more continuous. Schindler says that no necrosis of muscle occurs if care is taken to avoid vessels. The gradual action of salvarsan introduced intra-muscularly is said to avoid the danger of the drug when suddenly introduced into the circulation by intravenous injection.

C. F. M.

Evolution and Disease. By J. T. C. Nash, M.D. Bristol: John Wright & Sons, Ltd., 1915. Price 3s. 6d. net.

Anything written by Dr. Nash is certain to afford interesting reading, and this latest volume from his pen is no exception to the rule. In his erudite and philosophic study of evolution and disease he is at his best, and the careful perusal of this volume cannot fail to suggest to others fresh fields for future research. The present volume is based on the author's Chadwick Public Lectures on "The Evolution of Epidemics." In the first three chapters he gives a brief historical *résumé* of records of mediæval epidemics. The remaining chapters touch on the evolution of pathology; and various factors in the evolution of epidemic disease are considered, particular attention being given to bacteriological evidence. The concluding

chapter on war as a factor in the evolution of epidemics will be read with special interest at this time. The book gives an excellent account of the progressive development of sanitation, and it should appeal to all medical men, especially those engaged in public health work. J. A.

ANNUAL REPORT FOR THE YEAR 1913 OF THE SCHOOL MEDICAL OFFICER TO THE STAFFORDSHIRE COUNTY COUNCIL.

THE work of the medical staff, consisting of one medical man and five lady physicians, comprises the inspection of 375 schools, and of 16,578 scholars out of the 83,254 on the rolls.

Out of 12,630, or 43 per cent., ailments requiring treatment, 5443 were known to have received some kind of attention, 2216 received no treatment, while no information was forthcoming as regards 4980 cases.

Failure to obtain treatment was analysed in 1797 cases. In about a quarter the cause appeared to be poverty, in rather more than a quarter it was obstinacy, and in almost half the cases more or less frivolous excuses were given.

The Board of Education has recently issued statistical tables the utility of which Mr. Priestley criticises. He points out that the mixture of age and sex which these tables involve makes them useless for scientific purposes, although their compilation entails enormous labour.

Drs. Alice Maclean and Agnes Nicoll contribute a discussion on mouth-breathing, aprosexia, and high palates.

They found that there was an excess of dull and backward children among mouth-breathers. This excess depended on deafness. If the latter condition was absent mouth-breathing children showed about the same proportion of dull children as the general average. It is then shown that mouth-breathing and high palates go together. A distinct, but not very large, preponderance of dull children have high palates, and this is due to the fact that children with high palates are usually mouth-breathers, and consequently deaf. It is further shown that high palates are more common among the rachitic than the usual school population. A state of feeble circulation not associated with failing heart is described by Mr. Priestley. Hands, cheeks, ear-tips and nose look as if they had been dipped in bilberry juice. Boys and girls are about equally affected. There is a marked increase in the frequency of its occurrence after the age of eight. It is common in dark-haired, strumous children. It is not associated with organic heart trouble.

The condition of general health of 1074 children, and of 243 more with sound dentures was compared. There was little to choose between the two. The state of nutrition was uninfluenced.

1255 of 20,140 examined had some sort of heart affection; 5 per cent. of these were functional and 1 per cent. organic. With regard to the former a pulmonic murmur was the most common sign, followed closely by a tricuspid murmur. Mitral affections formed 87·6 per cent. of the whole series of organic disease.

Girls were slightly more affected than boys.

Headache was the commonest symptom of which complaint was made. A history of rheumatism was only obtained in 18·6 per cent. of the cases.

Enlarged tonsils were only found in 15 per cent. of heart cases as compared with 20 per cent. of all scholars.

The report is one of considerable value and repays perusal.

C. R.

Report of the Minister of Public Instruction, Victoria, for the year 1912–13. Melbourne. Price 4s. 3d.

12,439 children were inspected by Mr. Havey Sutton and two lady inspectors, 2079 of these were High School scholars.

There are over 175,000 children in the elementary schools of the province, so it is no surprise to hear that visits are only made once in every two years.

The system of examination is superior to that in force in this country. Children are more thoroughly examined, and the age of selection shows a riper judgment.

Special reports are made on the treatment of ophthalmic and dental defects, eye conditions in certain districts, growth of Australian children, Bush nursing, and other kindred subjects. As there are only three ophthalmic clinics in the province, apart from those in the metropolis, the optician flourishes like a green bay tree, and Mr. Sutton recommends the travelling ophthalmic specialist. An experimental dental clinic, to cost in all £750, is about to be established.

In the special inquiry into eye conditions, 5 per cent. were found to be suffering from trachoma and 30 per cent. from conjunctivitis.

In the smears from the latter the diplo-bacillus of Morax Axenfeld predominated and in only a few were cocci and the Koch-Weeks bacillus discovered.

Squint was discovered in 16 per cent. of the scholars in one school. With regard to growth, not only are the height and weight recorded, but the minimum measurement of the chest on expiration and the maximum on inspiration are also noted, supplemented by lateral and antero-posterior mensuration with calipers. The analysis of 5672 such records has been made; 60 per cent. of the 5672, or 3377, were Australians of the second generation.

Throughout school life the boy's chest in complete expiration is larger in all diameters than the girl's. As the boy grows his chest becomes wider than the girl's, although the antero-posterior measurements are about the same in both sexes. Therefore the boy has the flatter, the girl the rounder, chest.

As the boy grows it follows that forward expansion during inspiration increases, while lateral expansion is unaltered. In the girl, on the other hand, expansion forwards remains about the same at fourteen as at six, while the lateral expansion rises slightly but definitely. To sum up, the girl heaves in the flanks when she breathes, the boy like a bellows held on the flat. C. R.

Rutland County Council Education Committee: Annual Report of the School Medical Officer for the Year 1913. By Christopher Rolleston, M.A., M.D.Oxon., M.R.C.P.Lond., M.R.C.S.Eng., County Medical Officer of Health and School Medical Officer. Leicester: W. Thornley & Son.

Reports based on the medical inspection of school children always afford interesting reading, and the one before us proves no exception to the rule. The statistics of the routine inspection seem to indicate that good progress is being made, but apparently there is in some places still room for improvement in the sanitary arrangements of the schools. Much useful and valuable information may be gleaned from the pages of this report, which should be studied by all engaged more especially in pædiatric work. J. A.